REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 2, 4, 6, 7, 9, 13, and 14 are pending in the present application. Claims 1, 2, 4, 6, 7 and 9 are amended. Claims 3, 5, 8, and 10 – 12 are cancelled. Claims 13 and 14 are new. Claims 1 and 6 are independent claims.

Claim Objections

Claims 4 – 5 and 9 – 12 are objected to as being in improper from because of multiple dependency. Applicants hereby cancel claims 5 and 10 – 12 and amend claims 4 and 9 to remove improper multiple dependencies from the claims.

Claim 6 is objected to due to informalities. Specifically, the Office Action states that the term "from by the powder dispenser" should properly be "formed by the powder dispenser." Applicants hereby amend claim 6 so that this limitation now reads as "from successively applied powder layers," thereby resolving the above-noted grammatical inconsistencies.

At least in view of the above, Applicants respectfully submit that the claims are in proper form and that all formal issues are satisfied and resolved. Accordingly, reconsideration and withdrawal of these objections is respectfully requested.

Claim Rejections - § 103(a)

Claims 1 – 3 and 6 – 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over International Patent Publication WO 01/81031 by Andersson. Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Claim 1

Independent claim 1 pertains to a method of making a three-dimensional product, the method comprising, in pertinent part, "calculating an energy balance for said selected area, said calculating including: determining whether energy radiated into the selected area is sufficient to maintain a defined working temperature of the selected area, and solving a thermal conductivity equation for a given temperature distribution of the selected area."

The Office Action admits that while Andersson teaches using a camera to sense temperature of a surface layer of powder (Page 8, lines 28 – 30), Andersson fails to teach or suggest calculating an energy balance as required by claim 1. The Office Action states that it would have been obvious to modify Andersson with the "known energy equation $H = C_p * m * \Delta T$" (Page 4 of Office Action). Applicants respectfully disagree.

Unlike Andersson, which is directed at <u>sensing</u> temperature, the present invention is directed at <u>calculating</u> the power required to keep the surface of an object at a given temperature. Calculation is a more efficient way of handling temperature control and management compared to the use of a camera. An approach centered on calculation does not require a temperature

measurement camera in order to operate. Andersson does not teach or suggest such a calculation-based instead of a sensor-based approach to temperature control.

Applicants further submit that the "known energy equation" cited in the Office Action is only applicable to a closed system. In the present situation, where heat diffuses out into the surroundings, such an equation is not suitable or applicable. Applicants therefore respectfully submit that Andersson fails to establish *prima facie* obviousness of independent claim 1 or any claims depending therefrom.

Claim 6

Independent claim 6 pertains to an arrangement for creating a three-dimensional product, the arrangement comprising, in pertinent part, "a control computer that: stores information about successive cross sections of the three-dimensional product, which cross sections build up the three-dimensional product, controls the beam guide according to an operating scheme, and calculates an energy balance for at least one part area within each powder layer by determining whether energy radiated into the part area is sufficient to maintain a defined working temperature of the part area and solving a thermal conductivity equation for a given temperature distribution of the part area."

The Office Action admits, as it does for independent claim 1, that Andersson does not actually teach or suggest an energy balance calculation. Applicants therefore respectfully submit that Andersson fails to establish *prima facie* obviousness of independent claim 6 for at least the same reasons at set forth with respect to independent claim 1.

Furthermore, the Office Action suggests, in point 37, that "any or all" of a set of parameters may be used to calculate an energy balance. Applicants respectfully disagree. Although a selection of a number of parameters may form the basis for an energy balance calculation (Para. 0075 of the Specification) any one of the listed parameters would not be sufficient on its own.

Summary

At least in view of the above, Applicants respectfully submit that Andersson does not establish *prima facie* obviousness of independent claims 1 or 6 or any claims depending therefrom. Applicants note that Andersson does not teach or suggest a calculated energy balance, and that the "known energy equation" suggested in the Office Action is unsuitable for use in the context of the present invention. Applicants therefore respectfully request that the rejection of claims 1, 2, 6 and 7 be reconsidered and withdrawn.

Double Patenting

Claims 2, 3, 7, 8 are rejected on grounds of double patenting. Insofar as it pertains to the presently pending claims, these rejections are respectfully traversed.

Applicants respectfully submit that claims 2 and 7 are not identical to any claims of either of copending U.S. Applications 10/539591 ("'591")) or 10/539587 ("'587").

With respect to '587, neither of claims 2 or 7 require dividing a selected area into a plurality of smaller part areas (as required by independent claims 1 and 11 of '587) and claims 8

and 18 of '587 do not require solving a thermal conductivity equation (as required by independent claims 1 and 6 of the present Application). The two claim sets have distinct and separate limitations that clearly distinguish them as pertaining to different inventions. Applicants therefore respectfully submit that neither of claims 2 or 7 claim the same invention as any claim of '587.

With respect to '591, neither of claims 2 or 7 require multiple fusion zones (as required by independent claims 1 and 9 of '591) and claims 7 and 15 of '591 do not require solving a thermal conductivity equation (as required by independent claims 1 and 6 of the present Application). The two claim sets have distinct and separate limitations that clearly distinguish them as pertaining to different inventions. Applicants therefore respectfully submit that neither of claims 2 or 7 claim the same invention as any claim of '591.

Accordingly, for at least the above-stated reasons, reconsideration and withdrawal of these rejections is respectfully requested.
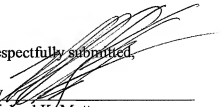
Conclusion

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but to merely show the state of the art, no comment need be made with respect thereto.

In view of the above amendment, applicant believes the pending application is in condition for allowance. Thus, the Examiner is respectfully requested to reconsider the outstanding rejections and issue a Notice of Allowance in the present application.

However, should the Examiner believe that any outstanding matters remain in the present application, the Examiner is requested to contact Applicants' representative, Naphtali Matlis (Reg. No. 61,592) at the telephone number of the undersigned in order to discuss the application and expedite prosecution.

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Respectfully submitted,

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